REMARKS

Reconsideration of the above-referenced patent application is respectfully requested in view of the foregoing amendments and remarks set forth herein.

Claims 58-63 have been amended, to insert material from the claims from which they originally depended.

In the Office Action of August 7, 2003, the Examiner took the following actions to which Applicant herein makes response: (1) made the restriction requirement final; (2) stated that claims 1-50 were withdrawn; (3) rejected claims 94-99 under the judicially created doctrine of obviousness-type double patenting over claims 9-17 of U.S. Patent No. 6,504,363; (4) rejected claims 56, 59, 64, 66-71, 73, 75, 76, 78, 79, 81-86, 88, 89, and 91-93 under 35 U.S.C. 102(e) as being anticipated by Tiernan et al. (6,150,809); (5) rejected claims 51-55, 57, 77, 80, 87 and 90 under 35 U.S.C. 103(a) as being unpatentable over Tiernan; (6) objected to claims 58, 60-63, 65, 72 and 74 as being dependent upon a rejected base claims but stated that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims; and (7) stated that the prior art made of record and not relied upon (Daughton, Yarmchuk, Collins, Murakami) was considered pertinent to applicant's disclosure. These rejections are traversed in application to the claims as amended, and consideration is requested of the patentability of claims 58-93 now pending in the application.

(1) Rejection of claims 94-99 under the judicially created doctrine of obviousness-type double patenting over claims 9-17 of U.S. Patent No. 6,504,363

Applicant has canceled claims 94-99 and therefore this rejection is now moot.

(2) Rejection of claims 56, 59, 64, 66-71, 73, 75, 76, 78, 79, 81-86, 88, 89, and 91-93 under 35 U.S.C. 102(e) as being anticipated by Tiernan et al. (6,150,809)

Applicant has canceled claim 56.

With respect to claim 59 as currently amended, Applicant respectfully submits that Tiernan et al. only discloses giant magneto-resistive sensors placed on the same substrate, and neither teaches nor suggests the incorporation of the coil and sensor on the same substrate.

With respect to claim 64, Tiernan only discloses an array of GMR sensors, and does not anywhere, including in the cited Figures 1a and 11a, teach or suggest "**a plurality of devices, each device comprising at least one coil and at least one two-dimensional magneto-resistive sensor**, the at least one coil for inducing an electromagnetic field in a specimen, the at least one two-dimensional magneto-resistive sensor comprising a first magneto-resistive sensor and a second coplanar magneto-resistive sensor, the first magneto-resistive sensor and the second magneto-resistive sensor each having a sensitive axis in the plane and measuring the electromagnetic field along the sensitive axis" (emphasis added). This difference is clearly seen in a comparison of Figure 11a of Tiernan to Figures 23a and 23b of Applicant. Applicant's plurality of devices is neither taught nor suggested by Tiernan. Claim 64 is therefore submitted to be patentable over Tiernan under Section 102(e).

With respect to claim 66, while Tiernan does disclose a one-dimensional array, this array is only of GMR sensors and shows this array of sensors only in Figure 16. In contrast, claim 66, depending from claim 64, is for a "plurality of devices" "arranged in a one-dimensional array", each of these devices "**comprising at least one coil and at least one two-dimensional magneto-resistive sensor**"

With respect to claims 66-71, and 73, these claims all depend from claim 64 and are therefore submitted to be patentable over Tiernan for the same reasons as claim 64. Further differences between these dependent claims and Tiernan include a two-

dimensional array (claims 67, 70), a three-dimensional array (claims 72, 73), arrangement on the same substrate (claims 67, 69, 71), and the arrangement about a central point (claim 70).

With respect to claim 75, Applicant respectfully submits that Tiernan neither teaches nor suggests Applicant's **detection of defects at an edge of a specimen**, nor this detection utilizing an excitation coil similarly shaped to the specimen for inducing eddy currents in the specimen nor "at least one magneto-resistive **sensor located above the edge of the specimen**, the at least one magneto-resistive sensor having a **sensitive axis tangentially-aligned with the edge of the specimen**". Such an arrangement is neither taught nor suggested by Tiernan.

Claims 76, 78, 79, 81-84 depend from and contain all of the limitations of claim 75, and are therefore submitted to also be patentable over Tiernan.

With respect to claim 85, Tiernan shows in Figure 1a, and discusses at column 9, lines 42-44, that the sensitive axis 52 of the GMR sensor is "aligned orthogonal to the principal axis 41 of the coil". In particular, Tiernan defines a principal axis 41 of the coil but does not specify anything about the cross-section of the coil. In Figure 1a the principal axis is perpendicular to the cross-section of coil 40.

In contrast, in claim 85 of Applicant, the coil has "a cross-section and an **axis of symmetry within a plane of the cross-section**". An example shown in Applicant's specification is Figure 35A where the cross-section of the coil has a D-shape, with an axis of symmetry 37 within its plane. The sensor 146 is positioned on the axis of symmetry with the sensitive axis coplanar with the cross-section and orthogonal to the axis of symmetry 37. This is as stated in claim 85: the sensor has an "axis of sensitivity **coplanar with the cross-section** and orthogonal to the axis of symmetry" which as just stated is **within** the plane of the cross-section of the coil. This arrangement is clearly not taught or suggested by Tiernan. Tiernan neither teaches nor suggests defining at axis of symmetry within the cross-section or specifically arranging the sensor with its sensitive

axis perpendicular to this axis of symmetry.

Claim 86 depends from and contains all of the limitations of claim 85 and is therefore submitted to be similarly patentable over Tiernan.

Claim 88 teaches the same arrangement as in claim 85 and is therefore submitted to be patentable over Tiernan.

Claims 89 and 91-93 depend from and contain all of the limitations of claim 88 and are therefore submitted to be similarly patentable over Tiernan.

Applicant therefore submits that claims 59, 64, 66-71, 73, 75, 76, 78, 79, 81-86, 88, 89, and 91-93 now pending herein are therefore allowable under Section 102(e).

(3) Rejection of claims 51-55, 57, 77, 80, 87 and 90 under 35 U.S.C. 103(a) as being unpatentable over Tiernan

Applicant incorporates herein the above remarks made with respect to Tiernan.

Claims 51-55 have been canceled.

Claims 52-55 and 57 have been canceled.

Claim 77 and 80 depend from claim 75, which as discussed above, is neither taught nor suggested by Tiernan. These claims are therefore submitted to be similarly patentable over Tiernan.

Claim 87 depends from claim 85, which as discussed above, is neither taught nor suggested by Tiernan. This claim is therefore submitted to be similarly patentable over Tiernan.

Claim 90 depends from claim 88, which as discussed above, is neither taught nor suggested by Tiernan. This claim is therefore submitted to be similarly patentable over Tiernan.

Applicant therefore submits that claims 77, 80, 87 and 90 now pending herein are therefore allowable under Section 103(a).

(4) Objection to claims 58, 60-63, 65, 72 and 74 as being dependent upon a rejected base claims but stated that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

Claims 58 and 60-63 have been amended to be in independent form including all of the limitations of the base claim and any intervening claims, and are therefore clearly allowable. As stated above, the claims from which claims 65, 72 and 74 depend are submitted to be patentable over Tiernan, these three claims are also submitted to be patentable over Tiernan, and therefore have not been rewritten.

(5) Statement that the prior art made of record and not relied upon (Daughton, Yarmchuk, Collins, Murakami) was considered pertinent to applicant's disclosure

Applicant has reviewed this prior art and submits that the invention claimed herein remains patentable over these references.

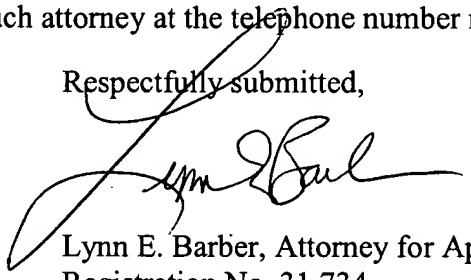
Conclusion

For all the foregoing reasons, claims 58-93 now pending herein are submitted to be fully patentably distinguished over the cited references and in allowable condition. Favorable consideration is therefore requested.

There are now 36 claims and 10 independent claims in this application. While the amendment herein results in the addition of independent claims, more than this number of independent claims have been withdrawn or canceled. It is therefore submitted that no additional fee is due for the submission of new claims. The fee for extension of time is separately submitted. Any amounts that may be due for presentation of this amendment should be charged to Deposit Account No. 02-0825 of Applicant's attorney.

If any questions or issues remain, the resolution of which the Examiner feels would be advanced by a personal or telephonic conference with Applicant's attorney, the Examiner is invited to contact such attorney at the telephone number noted below.

Respectfully submitted,



Lynn E. Barber, Attorney for Applicants
Registration No. 31,734
P.O. Box 16528
Fort Worth, TX 76162
(817) 361-7131

Enclosure:

a) Revocation of Power of Attorney with New Power of Attorney and Change of Correspondence Address
b) Petition for Extension of Time and Fee